

Claims

- [c1] A material support system for supporting items having radio frequency identification (RFID) tags placed on the items, comprising:
 - at least one item support, each said at least one item support adapted to support a horizontal row of items;
 - at least one radio frequency antenna positioned adjacent said at least one item support; and
 - an antenna transport system, said transport system transporting said at least one radio frequency antenna along the horizontal row of items at said at least one item support.
- [c2] The system of claim 1 wherein said at least one item support comprises a plurality of item supports, said plurality of item supports adapted to support multiple horizontal rows of items and wherein said antenna transport system is adapted to transport said at least one radio frequency antenna along the multiple horizontal rows of items at said plurality of item supports.
- [c3] The system of claim 2 wherein said radio frequency antenna comprises a plurality of antennas positioned adjacent said plurality of item supports.

- [c4] The system of claim 2 wherein said antenna transport system transports said at least one radio frequency antenna horizontally along items on one of said item supports and vertically from one of said item supports to another of said item supports.
- [c5] The system of claim 2 including at least two vertical supports supporting said plurality of item supports, said vertical supports being spaced apart thereby defining a void, wherein said at least one radio frequency antenna being in said void.
- [c6] The system of claim 1 including a void adjacent said at least one item support, wherein said at least one radio frequency antenna being in said void.
- [c7] The system of claim 1 wherein said transport system comprises a monorail system.
- [c8] The system of claim 1 wherein said material support system comprises a retail store merchandising system and wherein said at least one item support comprises at least one retail store shelf adapted to support individual items, each of the items bearing an RFID tag.
- [c9] The system of claim 1 wherein said material support system comprises a warehouse material-handling system

and wherein said at least one item support comprises a row of container supports adapted to support multiple-item containers, each of the containers bearing an RFID tag.

- [c10] The system of claim 9 wherein said material support system comprises an automatic storage and retrieval system.
- [c11] The system of claim 10 wherein said automatic storage and retrieval system comprises a crane, said crane having a laterally traveling mast and a gripper that is vertically traveling along said mast, wherein said antenna transport system comprises said crane.
- [c12] The system of claim 11 wherein said at least one radio frequency antenna is positioned at said gripper.
- [c13] The system of claim 11 wherein said at least one radio frequency antenna is positioned at said mast.
- [c14] The system of claim 10 wherein said at least one item support comprises a plurality of item supports that are arranged in a vertically and horizontally matrix of container supports, wherein said automatic storage and retrieval system comprises a crane wherein said antenna transport system is adjacent said matrix of container supports opposite said crane.

